"SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED.

A Synopsis to be submitted for the Degree of Doctor of Philosophy in Botany (Horticulture) faculty

entitled

"Role of Water Soluble Fertilizer to Increase Growth and Yield of Dutch Rose in Polyhouse of Farmer"

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ABSTRACT OF THE PROPOSED WORK
Problems / Plan / Process / Proposals

Even after 7 decades after independence, the agriculture based country (percentage of farmers lessening from 85 to 65% of population related to farming), there is not very considerable change in the conditions of farmers.

Marathwada region suffers comparatively more than other divisions and per capita income is less. The problems are with less rains, more heat, illiteracy among farmers, their refusal to change traditional farming, divisional imbalance and lack of capacity to take risks.

Horticulture and floriculture, and growth in production with advance technology and modern ways of adaptation of technology / guidelines for better yield and more benefits are need of time. The Polyhouses, Green House, Shade House are some of the ways to bring metamorphic changes in the lives and livelihoods of farmers. In fact these are some new technical suggestions that can be helpful to this region (8 districts) and later on to the state and to the nation.

Horticulture is the base of society and efforts to make it firm, solid and strong; all have to participate in this process. The present research is only on honest step taken in the direction of progress and prosperity of farmers in general, and the regional farmers, in particular.

Introduction :

India is a country with agricultural as well as cultural base whereas the western world has been with modern techniques such as dense of fruit crops, green houses and mechanical advances. India and the Indians have approximately 85% to lessening to 65% of the population related to agriculture and the village pattern has been adopted since the ancient times. However, in order to keep pace with modern world in its cutthroat

competition, Indian society is slowly turning towards metropolitan, cosmopolitan city systems, is it for better or for worse, is the basic question, hard to answer.

The traditional farming and the set crop pattern, dependent on literary, economy and rain-proportions have been adopted so far, and there is a dire need of Horticultural Development with advance technical assets such as green houses and modern marketing techniques, dense population of fruit crops, advance irrigation system.

Agriculture and culture are deep-rooted in Indian soil and mind and it needs metamorphic changes so as to be helpful in getting rid of the present plight and predicament, tragic disillusionment and helpless situation of the farmer, the feeder of society. Human population grows in geometrical progression, income sources in arithmetical progression but the cultivating land is fixed, in fact, a sort of fixed deposit. Hence, efforts to encourage, inspire and enable the farmer-class to adopt horticultural advanced experimentation are essential aspects. In fact the land cannot grow in proportion, but there can be a very substantial increase in the yield with the help of the modern technology and advanced structures of Green Houses, Fruit Crops and Roses in Polyhouse, Tissue Culture and 7-Tier system and Israel spiral system of creating land in perpendicular and horizontal tiers.

The researcher has deliberately chosen the Marathwada region, with all is backwardness, drought like situation, limited rain and prejudiced views and selfish motives regarding the storage tanks and dams, creating imbalance in per capita income. The problems of poverty, the loan systems, the government efforts fail to abolish suicide of farmers.

The Marathwada region had been under the Nizam Rule upto 17th September 1948 (one year after Indian Independence) and after Sardar Patel's 'Police Action' it became free. After Nagpur Contract (1960), the region joined the Maharashtra State. Since then it has been a permanent

victim of natural and political problems. It has remained a comparatively backward region, therefore, the present study aims to locate certain problems related only it the field of Agriculture and Agriculture fields only. The region has Aurangabad, Parbhani, Nanded, Jalna, Latur, Beed, Osmanabad and Hingoli (8 districts). It has three Universities at Aurangabad, Parbhani and Nanded (Dr. Babasaheb Ambedkar Marathwada University, Swami Ramanand Teerth Marathwada University and Vasantrao Naik Agriculture University).

The principle objectives and aims of Parbhani's one Agricultural University Vasantrao Naik Agriculture University had been development of agriculture. Aurangabad University has a vast area of 700 acres and has variety of planned fruit trees and greenhouse consisting of variety of international roses. Swami Ramanand Teerth Marathwada University has a vast area of 712 acres is keenly interested in the field of agriculture and the present research project is also inspired by Swami Ramanand Teerth Marathwada University. The researcher expresses a sense of gratitude for this facility.

Adikant Pradhan (2013), Protected Cultivation : Advance stage of horticulture development is protected cultivation. While growing horticulture crops and floriculture crops photo period is maintained, humidity and water management and CO_2 level are maintained to get quality production.

Dr. A. S. Naphade (2002), Commercial Flower Production : Central government's open financial planning according to that encourages to export of fruit, vegetable and flowers. Like fruit and vegetable export of floriculture increases day by day presently. Approximately 65000 hectare Area is under floriculture among that 12000 hectare are in Maharashtra. In Maharashtra Greenhouse, farming started in 1991 by private sector. But actually farmer started Greenhouse floriculture from 1994-95. In Maharashtra total 580 small farmers started doing floriculture. Presently 120 hectare area is under floriculture. In five years it is expected near

about 300 hectare. In Maharashtra, Sangli, Nashik, Pune, Solapur farmer started installation of Greenhouse. In Marathwada, Aurangabad, Nanded, Osmanabad, Latur, Hingoli started installation of Greenhouse. Farmer is attracted towards floriculture because they can get more production in small area with minimum worker and less water.

Dr. Shivaji Thombre (2000), Greenhouse- Polyhouse Problems and Solution : India is known for Agriculture potential. Population of country day by day is increasing. As to maintain ratio of population and fertile soil there is need to go for advance technology in farming. Our fruit production should be increased. In International market for floriculture our share is not upto 1% floriculture sector. Netherland has share near about 65 to 70% in International Market. If we have to increase out floriculture sector then there is no alternative instead of installation of greenhouse, polyhouse in local area having our own local infrastructure facilities.

International Status :-

Floriculture in tremendously flourishing in South Africa country Kenya, Ethiopia thousands of acres of land is under floriculture. Karturi floriculture India Bangalore company has taken own land in Netherland and Kenya. On 6000 acre of land is establish floriculture in Netherland. Now Karturi floriculture India is the biggest company of floriculture in South Africa. World's biggest and no. 1 Horticulture Auction is in Amsterdam, Netherlands.

National Status :-

Shrivardhan Agri-Tech. Kondigre, District Kolhapur established 100 acre of floriculture in India. Farmer from village 'Padmashree Sare Patil' established the biggest export oriented organization. Shrivardhan Agri-tech. is symbol of advance technology adopted in horticulture in India. In Karnataka state Horticulture and Floriculture are growing very fast. Have great role in increase national economy.

Significance of the Topic :-

The need for diversification to horticulture sector was acknowledged by the Government of India in the Mid-1980, by focusing it attention on investment in this sector. Presently horticulture has established its credibility in improving income through increased productivity generating employment and in enhancing exports. Resultantly, horticulture has moved from rural confines to becoming a commercial venture.

The scenario of horticultural crops in Maharashtra has become very encouraging. The percentage share of horticulture output in agriculture has become more than 30% under the purview of agriculture and allied activities. The share of plan outlay for horticulture which was 3.9 during ninth five year plan has increase to 4.6 during the twelfth plan.

India has witnessed voluminous increase in horticulture. The last few year significant progress has been made in area expansion resulting in higher production over the last decade. The area under horticulture grew by about 2.7% per annum and annual production increased by 7.0%. During 2013-14 the production of horticulture crop was about 283.5 million tons from an area of 24.2 million hectare (out of six categories that are fruits, vegetable, flowers spices).

Great potential exist for cultivation of flowering plants increasing trends in are and production of flowers has been observed since 2003-04. In addition to the beautification of the local landscape, great scope exist for export of flowers and floriculture is important for bee-keeping industry which too provides an alternate source of income to farmer. There is need of Marathwada region also should come ahead with production of horticulture. Now days Mosambi and Pomogranate is playing important role in increasing financial growth of farmer. Advance technology must be for improving horticulture production in Marathwada region. Research on horticulture and floriculture with advance technology is significant for Marathwada region.

Objective of the Research :-

1) To Increase Yield of Dutch Rose in Polyhouse.
2) Make Precise Fertilize Schedule for the Growing of Dutch Rose in Polyhouse.
3) Increase in Production Rose in Polyhouse will be help to Increase Economic Growth of Farmer.
4) To Study that Water Soluble Fertilizer are Most Suitable than Complex Fertilizer.
5) To Study about Market Value of Dutch Rose in Domestic Maket and International Market.

Hypothesis of the Research :-

1) Water Soluble Fertilizer may increase the production of Dutch Rose in Polyhouse but market prices of Water Soluble Fertilizer are variable.
2) Water Soluble Fertilizer enhance quality Dutch rose production but precise fertilizer schedule not yet confirmed.
3) National Horticulture Board (NHB) and National Horticulture Mission (NHM) encourage farmers by giving subsidy. But increase rate in fertilizer agriculture asseseries discourages farmers.

Research Methodology :-

To get objectives of research in research work scientific methods will be used. Descriptive and comparative methods will be used after data collection and subsequent analysis for research, references and quotations PMLA style-sheet rules will be followed.

Methodology :

Macro Nutrients :

Use of Nitrate : Calcium Nitrate, Potassium Nitrate.

Use of Phosphate : Mono Ammonium Phosphate, Mono Potassium Phosphate.

Use of Sulphate : Sulphate of Potash, Magnesium Sulphate.

Micronutrients : Use of

Fe- Ferrous Sulphate, Iron-EDDHA, Mn – Manganese Sulphate, B- Boron, Zn- Zin Sulphate, Sodium Molybdate.

Acid : Nitric Acid, Citric Acid, Sulphuric Acid

In this process 'A' tank, 'B' tank and 'C' tank method will be used.

'A' tank	'B' tank	'C' Tank
Calcium Nitrate Potassium Nitrate	Potassium Magnesium Sulphate Mono Ammonium Phosphate Mono Potassium Phosphate Iron Chelate / Iron Sulphate/Iron EDDHA Zinc Suplhate Magnese Sulphate Boron	Sulphuric Acid Nitric Acid Citric Acid

Measures Used in PPM (Part Per Million), Gram, Kilos.

Nature of The Research :-

Nature of the research is for Agriculture only. The present research work deals with the farmers and their practices of cultivation of floriculture crops. The present study will be analytical and comparative in nature.

Scope of the Research :-

The present study will be related to farmers. Their problem and solution about adaptation of Advance Technology in Floriculture increase considerable yield in the dutch rose production in polyhouse.

Data Collection :-

For present research study the primary and secondary source will be adopted as follows.

Primary Source :-

Primary sources will be interviews and statistical data.

Secondary Source :-

Secondary sources will be books, government reports, NHB and NHM schemes, National Agriculture Development Schemes, Magazines, Floriculture, International Newspapers, authorized websites and update information.

Sample Selection :-

For the present research essential sample selection will be as follows.

Sample Selection Area :-

1) Farmers using water soluble fertilizer for duct rose in polyhouse and complex fertilizer for Rose in polyhouse.
2) Farmers using complex fertilizer for dutch rose in polyhouse.

Sample Factor :-

For the study 10 farmers using complex fertilizer for dutch rose in polyhouse and 10 farmers water soluble fertilizer for dutch rose in polyhouse.

Sample Selection Technique :-

For research study the purposive random sampling will be adopted. In research work for information collection, statistical tools will be used as Average, Percentages, Growth rate, Graphs, different tests and circular presentations, Measures Used in PPM (Part Per Million), Gram, Kilos, grams etc.

Limitation of Research :-

The present research study will deal in that water soluble fertilizer application to enhance yield dutch roses in polyhouse of farmer.

Proposed Work Plan / Formulation and Structure of Study Yearwise Plan of Work and Target to be Achieved :

Year	Proposed Work	Target to be Achieved
First Year	Literature Survey	To obtain information water soluble fertilizer for dutch rose in polyhouse.
	Finalizing the Methodology	Comparison of various method of fertilizer application adopted by farmers in development of Dutch rose in polyhouse.
Second Year	Advance Methods	Application of water soluble fertilizer nitrate and phosphates and complex fertilizer, nitrate and phosphates to rose in polyhouse application of water soluble fertilizer potash and micro nutrients to rose in polyhouse and study of precise water soluble fertilizer schedule for polyhouse.

	Finalizing the quantity of advance technique with reference to Marathwada Region.	To get conclusion of application of nitrate and phosphates on rose in polyhouse. To get conclusion of application water soluble fertilizer potash and micronutrients to rose in polyhouse study about market value of quality rose with different aspects. Make precise water soluble fertilizer schedule for rose in polyhouse.
Third Year	Standard Methods	By using different experiments with respect the climate conditions temperature, humidity and less water, less use of workers finalize flower crops ducth rose in polyhouse with comparison with open field and application of fertilizer.
	Modern Equipments and Techniques	Study of modern equipment for ex. flowering crops by automatic machine. Planters, cold-storage etc. finally most precise techniques in growing flowering crops dutch rose in polyhouse with fertilizer application method.
Fourth Year	Interpretation and compiling the results	Comparison of data obtained and discussion with experts.
	Preparing the thesis and submission	Submission, PPT presentation, Publication of thesis.

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